

Bank probationary officer

Reasoning Ability

CODED INEQUALITY

Decision making carries a lot of importance in our daily life. There are occasions in our life when the right and the best decision helps to tide over even the most complex of problems. Success of financial institutions like banks depends a great deal on timely decision.

Questions based on decision making have become a regular feature of most of the competitive examinations. Such questions are intended to check the decision making abilities, general intelligence, power of judgement and coordination and presence of mind of the candidates.

Here we deal with a few types of decision making tests.

TYPE -1

In this type of questions a symbol is given between two letters of the alphabet. You have to find out the meaning of each symbol by carefully studying the directions. In the questions that follow a statement is given which is followed by two conclusions. You have to find which of the conclusions logically follows the statement. Give answers as per the directions given.

Example :

Directions (Q.186-190) : In the following questions the symbols #, *, @, \$ and = are used with the following meanings:

A # B means A is greater than B.

A * B means A is greater than or equal to B. A @ B means A is equal to B.

A \$ B means A is lesser than B.

A = B means A is lesser than or equal to B.

Now in each of the following questions, assuming the three statements to be true, find which of the two conclusions I and II given below them is/are true. Give answer.

- 1) if only conclusion I is true
- 2) if only conclusion II is true
- 3) if either conclusion I or conclusion II is true
- 4) if neither conclusion I nor conclusion II is true
- 5) if both conclusions I and II are true.

1. Statements : P # Q, R \$ P, R * O
Conclusions : I. Q # R II. Q \$ R
2. Statements : P = Q, T @ R, R # P
Conclusions : I. T = Q II. Q * T
3. Statements : P @ Q, L @ M, P # L
Conclusions : I. Q # M II. M \$ P
4. Statements : P # M # L, L # N @ Q, Q \$ S @ R
Conclusions : I. R @ M II. L @ R
5. Statements : P * Q, Q @ T, T * L
Conclusions : I. Q # L II. T # P

ANSWERS WITH EXPLANATIONS

1. 4; $P > Q, R < P, R \geq O \Rightarrow Q \geq R$ or $Q \leq R$
2. 3; $P \leq Q, T = R, R > P \Rightarrow T \leq Q$ or $T \geq Q$
3. 5; $P = Q, L = M, P > L \Rightarrow Q > M$ and $M < P$
4. 4; $P > M > L; L > N = Q; Q < S = R$
5. 4; $P \geq Q, Q = T$ and $T \geq L \Rightarrow Q \geq L$

PRACTICE TEST

1. "@" means " \leq ", " Δ " means ">" and "\$" means "=". If $P @ Q, R \Delta S$ and $Q \$ R$, then which of the following statements is definitely true?
 - 1) $R \Delta P$
 - 2) $P \$ Q$
 - 3) $P @ R$
 - 4) $P @ S$
 - 5) None of these

Directions(Q.2-6): In the following questions the symbols @, $\underline{\text{a}}$, =, a and a are used with the following meaning:

P @ Q means P is greater than Q.
 $\underline{\text{P@Q}}$ means P is either greater than or equal to Q.
 P = Q means P is equal to Q.
 P@Q means P is smaller than Q.
 P@Q means P is either smaller than or equal to Q.

Now in each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true? Give answer

- 1) if only conclusion I is true,
 2) if only conclusion II is true,
 3) if either I or II is true,
 4) if neither I nor II is true, and
 5) if both I and II are true.
2. **Statements** : B @ V K a C, C a B
Conclusions: I. V @ C **II.** B @ K
3. **Statements** : K @ T, S = K, T a R
Conclusions : I. S @ R **II.** T = R
4. **Statements** : U = M, P @ U, M @ B
Conclusions : I. P = B **II.** P @ B
5. **Statements** : L @ N, J a P, P @ L
Conclusions : I. J = L **II.** P = N
6. **Statements** : H @ G, D @ E, H = E
Conclusions : I. D @ H **II.** G a D

Directions(Q.7-11): In the questions given below, certain symbols are used with the following meaning:

A @ B means A is greater than B.
 A + B means A is either greater than or equal to B.
 A # B means A is smaller than B
 A@B means A is either smaller than or equal to B.
 A \$ B means A is equal to B

Now in each of the following questions assuming the given statement to be true find which of the two conclusions I and II given below them is/are definitely true? Give answer

- 1) if only conclusion I is true.
- 2) if only conclusion II is true,
- 3) if either I or II is true.
- 4) if neither I nor II is true.
- 5) if both I and II are true.
7. **Statements** : T \$ G, K @ P, M # T, P + M
Conclusions : I. K @ T **II.** G \$ P
8. **Statements** : R + N, S @ B, A @ R, B \$ A
Conclusions : I. S \$ N **II.** A @ N
9. **Statements** : G \$ K, F @ J, K + Q, Q + F
Conclusions : I. K \$ F **II.** F # K
10. **Statements** : W @ S, K @ Z, U + W, S \$ K
Conclusions : I. U @ K **II.** Z @ S
11. **Statements** : G \$ E, D # K, E # S, K + G
Conclusions : I. S @ D **II.** D # E

Directions (Q. 12-16): In the following questions the symbol \$, @, *, ** and # are used with the following meaning.

A \$ B means A is greater than B
 A @ B means A is either greater than or equal to B
 A * B means A is equal to B
 A ** B means A is smaller than B
 A # B means A is either smaller than or equal to B

Now in each of the following questions assuming the given statement to be true, find which of the two conclusions I and II given below them is/are definitely True ? Give answer

- 1) if only conclusion I is true.
- 2) if only conclusion II is true.
- 3) if either I or II is true.
- 4) if neither I nor II is true.
- 5) if both I and II are true.
12. **Statements** : P @ Q, M # N, N ** Q
Conclusions : I. P \$ M **II.** N # P
13. **Statements** : D ** X, F @ Y, D \$ F
Conclusions : I. X @ Y **II.** Y # D
14. **Statements** : M ** P, S \$ T, M @ T
Conclusions : I. S * M **II.** T ** P
15. **Statements** : U * V, X \$ W, U ** W
Conclusions : I. W \$ V **II.** U ** X
16. **Statements** : G \$ H, J # K, H * K
Conclusions : I. H \$ J **II.** J * H

Directions (Q, 17-21): In the following questions the symbols \$, @, *, # and ? are used with the following meanings.

A \$ B means A is greater than B.

A @ B means A is either greater than or equal to B.

A * B means A is equal to B.

A # B means A is smaller than B.

A ? B means A is either smaller than or equal to B.

Now in each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely True? Give answer.

1) If only conclusion I is true.

2) If only conclusion II is true.

3) If either I or II is true.

4) If neither I nor II is true.

5) If both I and II are true.

17. **Statements** : M # N, T \$ U, N # U

Conclusions : I. M ? T II. T \$ N

18. **Statements** : P \$ T, G ? N, T @ N

Conclusions : I. P \$ N II. G ? T

19. **Statements** : P ? Q, R \$ S, Q @ S

Conclusions : I. P \$ S II. R # Q

20. **Statements** : J # K, K * F, H @ F

Conclusions : I. J ? H II. H \$ K

21. **Statements** : D @ F, G \$ H, F ? H

Conclusions : I. G \$ F II. D @ H

Directions (Q.22-26): In the questions given below, certain symbols are used with the following meanings:

A @ B means A is greater than B.

A * B means A is either greater than or equal to B.

A # B means A is equal to B.

A \$ B means A is either smaller than or equal to B.

A + B means A is smaller than B.

Now in each of the following questions, assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true? Give answer

1) if only conclusion I is true

2) if only conclusion II is true

3) if either I or II is true

4) if neither I nor II is true

5) if both I and II are true

22. **Statements** : B + D; E \$ T; T * P; P @ B

Conclusions : I. P \$ D II. P @ D

23. **Statements** : E * F; G \$ H; H # E; G @ K

Conclusions : I. H @ K II. H * F

24. **Statements** : P \$ Q; N # M; M @ R; R * P

Conclusions : I. P + N II. Q \$ M

25. **Statements** : D + T; E \$ V; F * T; E @ D

Conclusions : I. D \$ V II. D + F

26. **Statements** : T * U; U \$ W; V @ L; W + V

Conclusions : I. V @ T II. L # W

Directions (Q. 27-31): In the following questions, the symbols +, x, =, ÷, and - are used with the following meaning:

P + Q means P is greater than Q.

P x Q means P is either greater than or equal to Q.

P = Q means P is equal to Q.

P ÷ Q means P is smaller than Q.

P - Q means P is either smaller than or equal to Q.

Now in each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true. Give answer

1) if only conclusion I is true,

2) if only conclusion II is true,

3) if either I or II is true.

4) if neither I nor II is true.

5) if both I and II are true.

27. **Statements** : U + V, W - Y, Y x U

Conclusions : I. W + U II. W ÷ V

28. **Statements** : B ÷ A, D x E, E + A

Conclusions : I. D + A II. B ÷ E

29. **Statements** : S x Q, R + T, R - S

Conclusions : I. S + T II. Q = T

30. **Statements** : M ÷ N, P x Q, P + N

Conclusions : I. N + Q II. N - Q

31. **Statements** : G - H, K x L, L - G

Conclusions : I. G ÷ K II. L - H

Directions (Q. 32-36): In the following questions the symbols @, c, £, ? and \$ are used with the following meanings:

A @ B means A is neither equal to nor smaller than B.

A c B means A is neither greater nor smaller than B.

A £ B means A is not equal to B.

A ? B means A is neither greater than nor equal to B.

A \$ B means A is either greater or equal to B.

Now, in each of the following questions, assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true. Give answer

1) if only conclusion I is true

2) if only conclusion II is true

3) if either I or II is true

4) if neither I nor II is true

5) if both I and II are true

32. **Statements** : N ? S, S @ P, P £ M

Conclusions : I. S @ M II. P c N

33. **Statements** : J c P, P \$ N, J £ H

Conclusions : I. J c N II. H @ P

34. **Statements** : Z @ D, F c D, F \$ G

Conclusions : I. D c G II. Z @ G

35. **Statements** : L @ T, P ? T, K \$ L

Conclusions : I. L @ P II. K @ T

36. **Statements** : R c U, U ? Q, W \$ R

Conclusions : I. W c U II. W @ U

Directions (Q. 37-41): In the following questions, certain symbols are used with the following meanings:

i) A # B means A is not greater than B.

ii) A \$ B means A is neither smaller than nor equal to B.

iii) A ? B means A is neither greater than nor smaller than B.

iv) A * B means A is neither greater than nor equal to B.

v) A @ B means A is not smaller than B.

Now in each of the following questions, assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true. Give answer

1) if only conclusion I is true;

2) if only conclusion II is true;

3) if either I or II is true;

4) if neither I nor II is true; and

5) if both I and II are true.

37. **Statements** : P \$ Q, R @ S, P * R

Conclusions : I. Q * R II. P # S

38. **Statements** : U \$ V, W * X, U @ X

Conclusions : I. V @ X II. V * X

39. **Statements** : K # T, D \$ F, T * F

Conclusions : I. K * D II. D \$ T

40. **Statements** : M \$ N, G @ H, N ? H

Conclusions : I. M @ H II. M \$ G

41. **Statements** : G @ M, N # L, G * L

Conclusions : I. G @ N II. L \$ M

Directions (Q. 42-46): In the following questions, the symbols @, &, *, \$ and ? are used with the following meanings:

P ? Q means P is either equal to or smaller than Q.

P \$ Q means P is neither greater than nor smaller than Q.

P * Q means P is neither greater than nor equal to Q.

P @ Q means P is either greater than or equal to Q.

P & Q means P is not equal to Q.

Now in each of the following questions, assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true. Give answer

1) if only conclusion I is true;

2) if only conclusion II is true;

3) if either I or II is true;

4) if neither I nor II is true; and

5) if both I and II are true.



42. **Statements** : K\$M, N&M, J@K
Conclusions : I : J?M II: K \$N
43. **Statements** : K @ R, L & B, B ?K
Conclusions : I : B?R II :R*L
44. **Statements** : J*M, W\$E, J@W
Conclusions : I:M?W II : J ?E
45. **Statements** :R @ S, S ? U, T \$R
Conclusions : I:T\$S II : T ?U
46. **Statements** : A*B, B ? C, C @ D
Conclusions : I: A\$D II : B ? D

Directions (Q. 47-52): In the following questions the symbols +, *, ?, @ and S are used with the following meanings:

P+Q means P is neither smaller nor greater than Q.

P×Q means P is neither equal to nor smaller than Q.

P ? Q means P is neither greater than nor equal to Q.

P@Q means P is either greater than or equal to Q.

P \$ Q means P is not equal to Q.

Now in each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true. Give answer

- 1) if only conclusion I is true;
 - 2) if only conclusion II is true;
 - 3) if either I or II is true;
 - 4) if neither I nor II is true; and
 - 5) if both I and II are true.
47. **Statements** : P\$Q, Q×R, P +R
Conclusions : I. Q×P II. P ?Q
48. **Statements** : A + B, B \$ C, C ?A
Conclusions : I. C\$A II. B+C
49. **Statements** : Y@Z, Z × Q, Q \$P
Conclusions : I. Y?Q II. Y ?P
50. **Statements** : E × F, F @ L, L +N
Conclusions : I. N+F II. E ×L
51. **Statements** :H@J, J ? K, K ×M
Conclusions : I. H@M II. M ×J
52. **Statements** : M@T, T + V, V?E
Conclusions : I. V+M II. V ?M

Directions (Q. 53-57): In the following questions the symbols *, ×, S, @ and + are used with the following meaning:

'P×Q' means 'P is neither smaller nor greater than Q'.

'P@Q' means 'P is neither equal to nor greater than Q'.

*P*Q' means 'P is either equal to or smaller than Q'.

'P+Q' means 'P is neither equal to nor smaller than Q'.

'P \$ Q' means 'P is not equal to Q'.

Now in each of the following questions assuming the given statements to be true, find out which of the two conclusions I and II given below them is/are definitely true? Give answer

- 1) if only conclusion I is true.
 - 2) if only conclusion II is true.
 - 3) if either conclusion I or II is true.
 - 4) if neither conclusion I nor II is true.
 - 5) if both conclusions I and II are true.
53. **Statements** : D*F, F\$M, M@K
Conclusions : I. F@K II. D @K
54. **Statements** : K + M, M@R, R ×T
Conclusions : I. K+T II. T +M
55. **Statements** : T@M, M*R, R ×N
Conclusions : I. M×N II. M@N
56. **Statements** : B \$ N, N × R, R +T
Conclusions : I. B\$R II. T @N
57. **Statements** : N × P, K + P, Q @K
Conclusions : I. K+N II. Q +N

Directions (Q. 58-62): In the following questions, the symbols \$, ©, ×, @ and # are used with the following meanings:

P \$ Q means P is not smaller than Q.

P © Q means P is neither greater than nor smaller than Q.

P @ Q means P is not greater than Q.

P × Q means P is neither smaller than nor equal to Q.

P # Q means P is neither greater than nor equal to Q.



Now in each of the following questions, assuming the given statements to be true, find which of the two conclusions and II given below them is/are definitely true. Give answer

- 1) if only conclusion I is true;
- 2) if only conclusion II is true;
- 3) if either I or II is true;
- 4) if neither I nor II is true; and
- 5) if both I and II are true.

58. **Statements** : Z\$K, K x T, T@F
Conclusions : I. F#Z II. Z x T
59. **Statements** : K x B, B @ D, D #K
Conclusions : I. B@K II. B #K
60. **Statements** : N@R, R@M, M\$J
Conclusions : I. N@M II. N #M
61. **Statements** : S \$ T, T@R, R #M
Conclusions : I. MxT II. M @T
62. **Statements** : H@V, V@M, M xR
Conclusions : I. RxH II. H xR

Directions (Q. 63-67): In the following questions, the symbol @, ©, *, \$ and # are used with the following meaning:

- 'P @ Q' means 'P is neither smaller than nor equal to Q'.
- 'P © Q' means 'P is not smaller than Q'.
- 'P * Q' means 'P is not greater than Q'.
- 'P \$ Q' means 'P is neither smaller than nor greater than Q'.
- 'P # Q' means 'P is neither greater than nor equal to Q'.

Now in each of the following questions, assuming the given statements to be true, find which of the two conclusions and II given below them is/are definitely true? Give answer

- 1) if only conclusion I is true.
 - 2) if only conclusion II is true.
 - 3) if either conclusion I or II is true.
 - 4) if neither conclusion I nor II is true.
 - 5) if both conclusions I and II are true.
63. **Statements** : Z#N, F@N, F*K
Conclusion : I. K\$N II. K @Z
64. **Statements** : D \$ T, T@M, M #K
Conclusions : I. M\$D II. D @M

65. **Statements** : W@A, B*A, B@M
Conclusions : I. B#W II. W \$B
66. **Statements** : J * M, M \$ N, N #T
Conclusions : I. T@J II. T \$J
61. **Statements** : V * F, F @ R, R © G
Conclusions : I. G#V II. G@V

Directions (Q 68-75): In the questions given below, certain symbols are used with the following meanings:

- P\$Q means P is neither equal to nor smaller than Q.
- P © Q means P is not smaller than Q.
- P*Q means P is neither greater nor smaller than Q.
- P # Q means P is neither greater than nor equal to Q.
- P @ Q means P is not greater than Q.

Now in each of the following questions, assuming the given statements to be true, find which of the two conclusions and II given below them is/are definitely true. Give answer

- 1) if only conclusion I is true.
 - 2) if only conclusion II is true.
 - 3) if either conclusion I or II is true.
 - 4) if neither conclusion I nor II is true.
 - 5) if both conclusions I and II are true.
68. **Statement** : M#K, K*D, D@P
Conclusions : I. M@P II. M*P
69. **Statements** : I. W@T, T\$M, B#M
Conclusions : I. W\$B II. M #W
70. **Statements** : H*D, D#R, R@N
Conclusions : I. N*H II. N\$H
71. **Statements** : Z@R, R©D, D#T
Conclusions : I. D#Z II. Z #T
72. **Statement** : Q#P, P@F, F*M
Conclusions : I. M\$P II. P *M
73. **Statements** : E\$J, J#H, H@M
Conclusions : I. E\$M II. J \$M
74. **Statements** : R@P, P\$M, M@D
Conclusions : I. D\$R II. M #R
75. **Statements** : F#K, K©D, N@D
Conclusions : I. N*K II. N #K

Directions (76-81) : In these questions relation between various elements have been shown in the statements. There are two conclusions following the statements.

- Answer (1) if only conclusion I is true
 Answer (2) if only conclusion II is true
 Answer (3) if either conclusion I or conclusion II is true
 Answer (4) if neither conclusion I nor conclusion II is true
 Answer (5) if both conclusion I and conclusion II are true

76. Statement : $B > C = D \geq X, E \leq X, Z \geq D$

Conclusion: I. $B > E$ II. $Z \geq B$

77. Statement : $E > F \geq G < H \leq I < J$

Conclusion: I. $G \leq E$ II. $J \geq F$

78. Statement : $Y < A \geq B = C < Z$

Conclusion: I. $C < Y$ II. $Z > Y$

79. Statement : $K \leq L < M > N \geq O, T > M \leq P$

Conclusion: I. $T > K$ II. $P > O$

80. Statement : $P \geq T > Q \leq R < S, A \leq Q > W$

Conclusion: I. $A < P$ II. $W < S$

81. Statement : $P \geq T > Q \leq R < S, A \leq Q > W$

Conclusion: I. $W < P$ II. $R > P$

***Directions (82-86) :** In these questions relation between various elements have been shown in the statements. There are two conclusions following the statements.

- Answer (1) if only conclusion I is true
 Answer (2) if only conclusion II is true
 Answer (3) if either conclusion I or conclusion II is true
 Answer (4) if neither conclusion I nor conclusion II is true
 Answer (5) if both conclusion I and conclusion II are true

82. Statement : $B \geq C = D, D < E, F \geq E, G = F$

Conclusion: I. $D < G$ II. $E > G$

83. Statement : $B \geq C = D, D < E, F \geq E, G = F$

Conclusion: I. $B \geq G$ II. $B \leq E$

84. Statement : $H \geq J, L = M, K \leq L, J \leq K$

Conclusion: I. $L \geq J$ II. $L > H$

85. Statement : $H \geq J, L = M, K \leq L, J \leq K$

Conclusion: I. $J = L$ II. $J < L$

86. Statement : $H \geq J, L = M, K \leq L, J \leq K$

Conclusion: I. $H < K$ II. $H > K$

ANSWERS AND EXPLANATIONS

1.3; $P \leq Q$ (i), $R > S$ (ii), $Q = R$ (iii)

Combining all, we get $P \leq Q = R > S \Rightarrow$ no relationship between P and S can be established. Hence (4) is not true,

From (i) and (in), we get $P \leq Q = R \Rightarrow P \leq R$. Hence (3) is definitely true.

(1) and (2) may be true but not necessarily so.

2.2; $B > V$... (i); $K < C$... (ii); $C \leq B$ (iii)

No relationship can be found out between V and C. Hence does not follow.

From (ii) and (iii), $B > K$. Hence II follows.

3.4; $K > T$.. (i) ; $S = K$(ii); $T \leq R$ (iii)

Neither relationship can be established.

4.3; $U = M$... (i); $P \geq U$.. (ii); $M \geq B$. (iii)

Combining, we get $P \geq U = M \geq B \Rightarrow P \geq B$

$\Rightarrow P = B$ or $P > B$

5.4; $L \geq N$ (i); $J \leq P$ (ii); $P \geq L$ (iii)

Neither relationship can be established.

6.5; $H > G$... (i); $D > E$... (ii); $H = E$ (iii)

Combining, we get $D > E = H \geq G \Rightarrow D > H$ and $G < D$

7.4 8.2 9.3 10.1



11.5; $G = E$(i); $D < K$(ii); $E < S$ (iii)
 $K \leq G$ (iv)

Combining these, we get $D < K \leq G = E < S$. Clearly, both conclusions I and II follow.

12.1; $P \geq Q$... (i), $M \leq N$..(ii), $N < Q$ (iii)

Combining all these, we get
 $P \geq Q > N \geq M \Rightarrow P > M$. Hence I follows.
From (i) and (iii), $P \geq Q > N \Rightarrow P > N$. Hence II is false.

13. 4; $D < X$... (i), $F \geq Y$... (ii), $D > F$ (iii)

From (ii) and (iii), $D > F \geq Y$... (iv) $\Rightarrow D > Y$.
Hence I may be correct but not necessarily so.

From (i) and (iv), $X > D > F \geq Y \Rightarrow X > Y$.
Hence II may be correct but not necessarily so.

14.2 15.5 16.3

17.2; $M < N$... (i), $T > U$... (ii); $N < U$ (iii)

Combining these, we get $M < N < U < T$
Hence $M < T$ and $T > N$.

18.5; $P > T$, .. (i); $G \leq N$..(ii), $T \geq N$ (iii)

From (i) and (iii), $P > N$

From (ii) and (iii), $G \leq T$.

19.4 $P \leq Q$ (i); $R > S$ (ii); $Q \geq S$ (iii)

Thus the relationships can't be established.

20.4; $J < K$... (i); $K = F$... (ii); $H \geq F$ (iii)

Combining these, we get $J < K = F \leq H$

So, $J < H$. Thus I does not follow.

Again, $H \geq K$. Thus II does not necessarily follow.

21.1; $D \geq F$ (i); $G > H$ (ii) $F \leq H$ (iii)

From (ii) and (iii), $G > F$. Hence I follows.

But II can't be established.

22.3; $B < D$ (i), $E \leq T$ (ii), $T \geq P$ (iii),

$P > B$. (iv)

From (i) and (iv), we get, $P > B < D \Rightarrow$ no conclusion. But the exhaustive possibilities are $P > D$, $P = D$ and $P < D$. Hence either I or II is true.

23.5; $E \geq F$ (i), $G \leq H$ (ii), $H = E$ (iii),

$G > K$ (iv)

From (ii) & (iv), we get, $H \geq G > K \Rightarrow H > K$.
Hence I is true.

From (i) & (iii), we get, $H = E \geq F \Rightarrow H \geq F$.
Hence II is true.

24.1; $P \leq Q$... (i), $N = M$... (ii), $M > R$ (iii),

$R \geq P$ (iv)

From (ii), (iii) & (iv), we get, $N = M > R \geq P \Rightarrow N > P$ or $P < N$. Hence I true.

From (iii), (iv) and (i), we get, $M > R \geq P \leq Q \Rightarrow$ No conclusion about the relationship between M and Q can be established.

25.226.4

27.4; $U > V$ (i), $W \leq Y$ (ii), $Y \geq U$ (iii)

From (ii) and (iii), $W \leq Y \geq U \Rightarrow$ No relationship between W and U can be determined. Hence I is not true. Now, using (i), again no relationship between W and V can be determined.



- 28.5; $B < A$... (i), $D \geq E$... (ii), $E > A$ (iii)
From (ii) & (iii), we get $D \geq E > A \Rightarrow D > A$.
Hence I is true.
From (i) and (iii), we get $B < A < E \Rightarrow B < E$. Hence II is true.
- 29.1; $S \geq Q$... (i), $R > T$... (ii), $R \leq S$ (iii)
Combining all, we get, $Q \leq S \geq R > T \Rightarrow$ No relationship between Q and T can be determined. Hence I is not true. But $S > T$. Hence I is true.
- 30.3; $M < N$ (i), $P \geq Q$ (ii), $P > N$ (iii)
From (ii) and (iii), we get $N < P \geq Q \Rightarrow$ No relationship between N and Q can be established. But I and II together are exhaustive. Hence either I or II is true.
- 31.2; $G \leq H$... (i), $K \geq L$... (ii), $L < G$ (iii)
From (ii) and (iii), we get, $K \geq L < G \Rightarrow$ I can't be established.
From (i) & (iii), we get, $L \leq G \leq H \Rightarrow L \leq H$. Hence II is true.
- (32-36): In these questions the negative meaning of these symbols is given to establish the relation between A and B, which can be easily converted to its simple and positive meaning. Expressing them mathematically, we get $@ \rightarrow >$ (greater than), $c \rightarrow =$ (equal to), \neq (means either greater than or smaller than, but no definite conclusion), $? \rightarrow <$ (smaller than), and $\$ \rightarrow \geq$.
32. 4; $N < S$... (i), $S > P$... (ii), $P \neq M$ (iii)
From (ii) and (iii), no definite relationship between S and M can be established. Hence I is not true. From (i) and (ii), we get, $N < S > P \Rightarrow$ no conclusion. Hence II is not true.
33. 4; $J = P$... (i), $P \geq N$... (ii), $J \neq H$ (iii)
From (i) and (ii), we get, $J = P \geq N \Rightarrow J \geq N \Rightarrow$ I may be true but not necessarily so.
From (i) and (iii), $P = J \neq H \Rightarrow P \neq H$. Hence again II may be true but $H < P$ may be the other possibility. Hence I is not true.
- 34.2 35.5 36.3
- 37.1; $P > Q$ (i) $R \geq S$ (ii), $P < R$ (iii)
From (i) & (iii), we get $R > P > Q \Rightarrow R > Q$ or, $Q < R$. Hence I is true.
From (ii) and (iii), we get $P < R \geq S \Rightarrow$ no conclusion. Hence II is not true.
- 38.3; $U > V$ (i), $W < X$ (ii), $U \geq X$ (iii)
From (i) and (iii), we get $V < U \geq X \Rightarrow$ no conclusion, mean either $V > X$, or $V = X$, or $V < X$. Hence either I or II is true.
39. 5; $K \leq T$... (i), $D > F$... (ii), $T < F$ (iii)
From (ii) and (iii), we get $D > F > T \Rightarrow D > T$. Hence II is true.
From II & (i), we get, $D > T \geq K \Rightarrow D > K$ or $K < D$. Hence I is true.
- 40.4
- 41.2; $G \geq M$..(i), $N \geq L$..(ii) $G < L$ (iii)
From (ii) and (iii), we get $G < L \geq N \Rightarrow$ no conclusions. Hence I is false.
From (i) & (iii), we get $L > G \geq M \Rightarrow L > M$. Hence II is true.
- 42.4
43. 4; $K \geq R$..(i), $L \neq B$..(ii), $B \leq K$, (iii)
From (iii) and (i), we get $B \leq K \geq R \Rightarrow$ no conclusion. Hence I does not follow. No relationship between R and L can be determined. Hence II does not follow.
44. 4; $J < M$... (i), $W = E$... (ii), $J \geq W$ (iii)
From (i) and (iii), we get $M > J \geq W \Rightarrow M > W$. Hence I is not true.
From (ii) and (iii), we get $J \geq W = E \Rightarrow J \geq E$. Hence II is not true.
- 45.4 46.4
- 47.5; $P \neq Q$ (i), $Q > R$ (ii), $P = R$ (iii)
From (ii) and (iii), we get $Q > R = P \Rightarrow Q > P$. Hence both I and II are true.
- 48.1; $A = B$ (i) $B \neq C$ (ii), $C < A$ (iii)
From (iii), conclusion I is true. II contradicts statement (ii), hence it is not true.
49. 4; $Y \geq Z$... (i), $Z > Q$... (ii), $Q \neq P$ (iii)
From (i) and (ii), we get $Y \geq Z > Q \Rightarrow Y > Q$... (A) Hence I is not true. From (iii), two possible relationships between P and Q are;
Case I : When $P > Q$
Now, using (A), we get $Y > Q < P \Rightarrow$ no conclusion.
Case II : When $Q > P$
using (A), we get $Y > Q > P \Rightarrow Y > P$. Hence II is not true.



50.2; $E > F$ (i) $F \geq L$ (ii), $L = N$ (iii)
 From(ii)&(iii),weget $F \geq L = N \Rightarrow F \geq N$ or $N \leq F$.
 Hence I may be true but not necessarily so.
 From(i)and(ii),weget $E > F \geq L \Rightarrow E > L$
 Hence I is true.

51.4; $H \geq J$(i), $J < K$... (ii), $K > M$ (iii)
 From (ii) and (iii), we get $J < K > M \Rightarrow$ no relationship between J and M can be established. Hence II can't be established. Again,combiningallwecan'tconcludethe relationship between H and M. Hence I is not true.

52.3; $M \geq T$... (i), $T = V$(ii), $V < E$ (iii)
 From (i) and (ii), we get
 $M \geq T = V \Rightarrow M \geq V \Rightarrow$ either $V = M$ or $V < M$ is true.

53.4 54.2 55.356.5 57.1 58.5
 59.2; $K > B$ (i), $B \leq D$ (ii), $D < K$ (iii)
 From(i), $B < K$.Hence I is true but II is not true. 60.

3; $N = R$... (i), $R \leq M$... (ii), $M \geq J$(iii)
 From (i) and (ii), we get $N = R \leq M \Rightarrow N \leq M$. Hence either I or II is true.

61.1; $S \geq T$ (i), $T \leq R$ (ii), $R < M$(iii)
 From (ii) & (Hi), we get $T \leq R < M \Rightarrow T < M$ or $M > T$.Hence I is true and II is not true.

62. 4; $H \leq V$... (i), $V = M$... (ii), $M > R$ (iii)
 Combining all,weget $H \leq V = M > R \Rightarrow$ no relationship between H and R can be established. Since conclusions I and II are not exhaustive,neither of them is true.

63.2; $Z < N$ (i); $F \geq N$ (ii) ; $F \leq K$ (iii)
 Combining all, we get
 $K \geq F \geq N > Z \Rightarrow K \geq N$ and $K > Z$
 Hence, conclusion I ($K = N$) is not necessarily true but conclusion II ($K > Z$) is true.

64. 3; $D = T$... (i); $T \geq M$... (ii); $M < K$ (iii)
 Combining (i) and (ii), we get
 $D = T \geq M \Rightarrow D \geq M \Rightarrow D = M$ or $D > M$
 Hence,either conclusion I ($M = D$) or conclusion II ($D > M$) is true.

65. 3; $W \geq A$... (i); $B \leq A$... (ii); $B > M$(iii)
 Combining all, we get
 $W \geq A \geq B > M \Rightarrow B \leq W$
 $\Rightarrow B < W$ or $B = W$
 Hence,either conclusion I or II is true.

66. 1; $J \leq M$ (i); $M = N$(ii); $N < T$(iii)

Combining all, we get

$$J \leq M = N < T \Rightarrow T > J$$

Hence, only conclusion I is true

67. 4; $V \leq F$ (i); $F > R$ (ii); $R \geq G$ (iii)
 Combining (ii) and (iii), we get $F > R \geq G$
(iv)Comparing(i)and(iv),wecan'tget any specific relationship between G and V.
 Hence,both conclusions are not true.

68. 4; $M < K$... (i); $K = D$... (ii); $D \leq P$(iii)
 Combining all the equations, we get
 $P \geq D = K > M \Rightarrow P > M$.Hence,conclusion I ($M \leq P$)&conclusion II ($M = P$) are not true.

69.5; $W \geq T$ (i); $T > M$ (ii); $B < M$ (iii)
 Combining all, we get $W \geq T > M > B$
 $\Rightarrow W > B$ and $W > M$.Hence,both conclusions ($W > B$, $M < W$) are true.

70. 4; $H = D$... (i); $D < R$... (ii) $R \geq N$ (iii)
 Combining(i)and(ii),weget $R > H = D$ (iv)
 From(iii)and(iv),wecan'tget any specific relation between N and H. Therefore, conclusion I ($N = H$) and conclusion II ($N > H$) are not true.

71.4; $Z \leq R$... (i); $R \geq D$... (ii); $D < T$ (iii)
 With these equations no relation can be established between D and Z, and Z and T.

72. 3; $Q < P$... (i); $P \leq F$... (ii); $F = M$ (iii)
 Combining all the equations, we get
 $F = M \geq P > Q \Rightarrow M \geq P$, ie $M > P$ or $M = P$.
 Hence,either conclusion I or II is true. 73.

4; $E > J$... (i); $J < H$... (ii); $H \geq M$ (iii)
 No relation can be established between E and M or between J and M. Hence, conclusion I ($E > M$) and conclusion II ($J > M$) are not true.

74. 2; $R \geq P$... (i); $P > M$... (ii); $M \leq D$ (iii)
 Combining (i) & (ii), we get $R \geq P > M$ (iv).
 From conclusion (iv), we get $R > M$. Hence, conclusion II ($M < R$) is true. But we can't get any specific relation between D and R. Therefore conclusion I is not true.

75.3; $F < K$ (i); $K \geq D$ (ii); $N \leq D$ (iii)
 Combining the equations (ii) and (iii), we get
 $K \geq D \geq N \Rightarrow K \geq N$, i.e. $K > N$ or $K = N$.
 Hence,either conclusion I or conclusion II is true.

76.1 77.4 78.4 79.5 80.5
81.1 82.1 83.4 84.1 85.3
86.4